ABSTRACT

A method and apparatus for increasing peer-to-peer bandwidth between remote networks by combining multiple connections, which use arbitrary data paths, is disclosed. The apparatus is a gateway node, which can be a specifically designed computer, open computer platform or extensions to firmware resident in a router; gateway or remote access server. The method includes origin authentication and data confidentiality, packet fragmenting, sequencing directed-routing, buffering, fragment encapsulation, packet re-assembly, and additional encapsulation for traversal of firewalls. Packet fragments transferred using the method can travel along very diverse paths through intervening public or private networks before arriving at the peer, which reassembles them. This eliminates the problems present in current aggregation schemes used by prior art, which are sensitive to the limitations in the infrastructure in the service provider's points of presence.